CLAIMS

We claim:

1. A method of configuring a packet based phone for initiating an emergency call in a packet based network, comprising:

receiving an ERL record at a packet based phone, said ERL record being associated with the phone's emergency response location; and

transmitting from the packet-based phone at least a portion of the ERL record as part of an emergency call setup process.

2. The method of claim 1, wherein the packet based network is an Internet Protocol network.

3. The method of claim 1, wherein the ERL record includes one or more ELINs, and wherein the phone transmits at least one of the ELINs.

4. The method of claim 1, wherein the ERL record includes one or more ELINs, and wherein the phone transmits at least one of the ELINs using the Session Initiation Protocol.

5. The method of claim 1, wherein the packet-based phone uses the Session Initiation Protocol.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

6. The method of claim 1, wherein the ERL record includes one or more ELINs, and wherein the phone transmits at least one of the ELINs in an SDP contained in a SIP INVITE message.

7. The method of claim 1, wherein the phone transmits at least a portion of the ERL record to a PSTN gateway device.

8. The method of claim 7, wherein the phone selects the PSTN gateway device according information in the ERL record.

9. The method of claim 7, wherein the portion of the ERL record comprises an ERL ID, and the PSTN gateway device inserts a corresponding ELIN into the caller identification portion of an outgoing 911 call.

10. The method of claim 7, wherein the portion of the ERL record comprises one or more ELINs, and the PSTN gateway device inserts one of the ELINs into the caller identification portion of an outgoing 911 call.

11. The method of claim 7, wherein the PSTN gateway device maintains a list of ELINs associated with a caller identification portion of active outgoing 911 calls, and wherein the PSTN gateway device selects ELINs for new outgoing 911 calls.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

12. The method of claim 1, wherein the phone transmits at least a portion of the ERL record to a call signaling device.

13. The method of claim 12, wherein the portion of the ERL record comprises at least an ERL ID, and the call signaling device selects a corresponding ELIN.

14. The method of claim 13, wherein the signaling device transmits a request to a PSTN gateway to make an outgoing 911 call using an ELIN inserted into a caller identification portion of the outgoing call.

15. The method of claim 12, wherein the portion of the ERL record comprises one or more ELINs, and the call signaling device selects an ELIN.

16. The method of claim 15, wherein the signaling device transmits a request to a PSTN gateway to make an outgoing 911 call using an ELIN inserted into a caller identification portion of the outgoing call.

17. The method of claim 12, wherein the call signaling device maintains a list of ELINs assigned to a caller identification portion of active outgoing 911 calls, and wherein the call signaling device selects ELINs for new outgoing 911 calls.

18. The method of claim 12, wherein the call signaling device is a SIP Proxy server.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

19. The method of claim 12, wherein the request to the PSTN gateway is a SIP INVITE message.

20. The method of claim 1 further comprising the step of determining the emergency response location of the phone based in part on an IP address of the phone.

21. The method of claim 1 further comprising the step of determining the emergency response location of the phone based in part on a MAC address of the phone.

22. The method of claim 1 further comprising the step of determining the emergency response location of the phone based in part on a serial number of the phone.

23. The method of claim 1, further comprising the step of transmitting an address of a PSTN gateway device for use during an emergency call.

24. The method of claim 1, further comprising transmitting a first notification message to a monitoring station when a 911 call is placed by a phone.

25. The method of claim 24, wherein the monitoring station ensures that a corresponding notification message is received from a PSTN gateway.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

26. The method of claim 25, wherein the monitoring station issues an alarm if it fails to receive the first notification message from the phone and the corresponding notification message from the PSTN gateway.

27. The method of claim 25, wherein a SIP NOTIFY message is used to send the notification from the PSTN gateway to the monitoring station.

28. The method of claim 24, wherein a SIP NOTIFY message is used to send the notification from the phone to the monitoring station.

29. A method of configuring a packet based phone for initiating an emergency call in a packet based network, comprising:

determining an ERL of the packet based phone; and

transmitting a corresponding ERL record to the packet based phone, said ERL record including parameters enabling the packet based phone to initiate an emergency 911 call.

30. The method of claim 29, wherein the packet based network is an Internet Protocol network.

31. The method of claim 29, wherein the packet based phone uses SIP.

32. The method of claim 29, wherein the ERL record is transmitted to the packet based phone using SIP.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

33. The method of claim 29, wherein the ERL record is transmitted to the packet based phone using a SIP OK message, issued in response to a SIP REGISTER message from the packet based phone to a SIP network.

34. The method of claim 29, wherein the ERL record is transmitted to the packet based phone as a textual message in the body of a SIP OK message, issued in response to a SIP REGISTER message from the packet based phone to a SIP network.

35. The method of claim 29, wherein the step of determining an ERL further comprises receiving an IP address of the phone, and determining the ERL in response to the received IP address.

36. The method of claim 35, wherein the step of determining the ERL in response to the received IP address comprises querying a network management system.

37. The method of claim 29, wherein the step of determining an ERL further comprises receiving a MAC address of the phone, and determining the ERL in response to the received MAC address.

38. The method of claim 37, wherein determining the ERL in response to the received MAC address comprises querying a network management system.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

39. The method of claim 29, wherein the step of determining an ERL further comprises receiving a serial number of the phone, and determining the ERL in response to the received serial number.

40. The method of claim 39, wherein determining the ERL in response to the received serial number comprises querying a network management system.

41. A method of configuring a packet based phone for initiating an emergency call in a packet based network, comprising:

receiving an ERL record at a packet based phone, the ERL record containing at least one or more ELINs and address information for contacting one or more emergency PSTN gateways;

responsively storing at least the information in the ERL record required to initiate a 911 call.

42. The method of claim 41 wherein the packet based network is an Internet Protocol network.

43. The method of claim 41, wherein the packet based phone uses SIP.

44. The method of claim 41, wherein the ERL record is received at the phone using SIP.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

45. The method of claim 41, wherein the ERL record is received at the phone using a SIP OK message, received in response to a SIP REGISTER message from the packet based phone to a SIP network.

46. The method of claim 41, wherein the ERL record is received at the phone as a textual message in the body of a SIP OK message, issued in response to a SIP REGISTER message from the phone to a SIP network.

47. The method of claim 41, further comprising the step of deregistering a user profile with a SIP proxy in the event a user dials 911.

48. The method of claim 41, wherein, responsive to the event of the packet based phone receiving signaling for an incoming call while a 911 call placed by the phone is still active, preventing the incoming call from interrupting the active 911 call.

49. The method of claim 41, wherein, responsive to the event of the user attempting to disconnect a 911 call, declining to issue the requisite disconnect signaling, and instead entering speaker phone mode.

50. A method of configuring a packet based phone for initiating an emergency call in a packet based network, comprising:

establishing a plurality of ERL records, each of the ERL records containing at least the following information: ERL ID; textual location description; managed network connection

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

points associated with the ERL; ELINs associated with the ERL; PSTN gateways associated with the ERL;

establishing a plurality of phone location information records, each of the phone location records containing at least the following information: a IP address of the phone; a MAC address of the phone; a serial number of the phone; an ERL ID associated with the phone; a managed network connection point associated with the phone; an ELIN associated with the phone; one or more PSTN gateways associated with the phone; and

transmitting to a phone at least part of the ERL record including parameters enabling the packet based phone to initiate an emergency 911 call.

51. The method of claim 50, wherein the packet based network is an Internet Protocol network.

52. The method of claim 50, wherein the packet based phone uses SIP.

53. The method of claim 50, wherein the plurality of ERL records is maintained in a centralized database.

54. The method of claim 50, wherein the plurality of phone location information records is maintained in a centralized database.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

55. The method of claim 50, wherein the at least part of the ERL record transmitted to the packet based phone is identified according to the managed network connection point of the phone.

56. The method of claim 55, wherein the managed network connection point of the phone is determined by querying a network management system with the IP address of the packet based phone.

57. The method of claim 55, wherein the managed network connection point of the phone is determined by querying a network management system with the MAC address of the packet based phone.

58. The method of claim 55, wherein the managed network connection point of the phone is determined by querying a network management system with the serial number of the packet based phone.

59. The method of claim 50, wherein the at least part of the ERL record is transmitted to a packet based phone responsive to a request containing the IP address of the packet based phone.

60. The method of claim 50, wherein the at least part of the ERL record is transmitted to a packet based phone responsive to a request containing the MAC address of the packet based phone.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

61. The method of claim 50, wherein the at least part of the ERL record is transmitted to a phone responsive to a request containing the serial number of the packet based phone.

62. The method of claim 50, wherein each of the plurality of phone location information records is associated with a distinct packet based phone, each of the distinct packet based phones being connected to the network at a managed network connection point.

63. The method of claim 50, further comprising the steps of:

receiving a registration request containing identifying information of a packet based phone;

determining that a corresponding phone location information record for the packet based phone does not exist; and

creating a new phone location information record.

64. The method of claim 63, wherein the identifying information comprises an IP address.

65. The method of claim 63, wherein the identifying information comprises a MAC address.

66. The method of claim 63, wherein the identifying information comprises a serial number.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

67. The method of claim 50, further comprising the step of verifying the accuracy of each of the plurality of phone location information records.

68. The method of claim 67 wherein the accuracy is verified by the steps of:

sending a network management query requesting the identity of the managed network connection point of the individual phone using one of the IP address and the MAC address of the phone, as stored in the associated phone location information record, and receiving a network management query response;

sending a phone query to the packet based phone requesting its stored ERL record, and receiving a phone query response;

comparing the managed network connection point reported in the network management query response with the identity of the managed network connection point reported in the phone query response;

comparing the identity of the managed network connection point reported in the network management query response with the identity of the managed network connection point reported in the phone query response; and

comparing the identity of the managed network connection point reported in the phone query response with the identity of the managed network connection point reported in the network management query response;

issuing a software alert if one of the above comparisons are not the same.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001

69. The method of claim 68 further comprising a programmable schedule upon which the said sequential steps are initiated for each existing individual phone location information record.

McDonnell Boehnen Hulbert & Berghoff
300 South Wacker Drive, 32nd Floor
Chicago, IL 60606
(312) 913-0001